



ASHESI UNIVERSITY

**IMPROVING EFFICIENCY THROUGH LAYOUT OPTIMIZATION FOR
LES KLAR COUTURE.**

Undergraduate Applied Project Report Submitted to the Department of Business
Administration, Ashesi University in partial fulfillment of the requirement for the
Award of Bachelor of Science degree in Business Administration

BSc Administration

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DECLARATION

I hereby declare that this Applied Project Report is the result of my own work and that no part of it has been presented for another degree in this university or elsewhere.

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I hereby declare that the preparation and presentation of the Applied Project Report were supervised in accordance with the guidelines on supervision of applied projects laid down by Ashesi University.

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“For if it hadn’t been for the Lord on my side, where would I be.” - Psalm 124:1
I thank the Almighty God for bringing me this far. For this reason, I am very grateful to God for the strength and the love he showed towards me during the execution of this project.

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EXECUTIVE SUMMARY

Les Klar Couture is a fashion company located in Ghana and noted for its simple, decent but classy designs. Selling at affordable prices, Les Klar hopes to expand its operations worldwide, a few years to come. It, however, focuses on empowering its clients to have confidence in themselves and to dress to suit their body sizes. The company currently runs its main branch at North Industrial Area and is yet to operate at its new branch in Kasoa. However, after conducting a needs assessment test, it was realized that the layout plan adopted in the old branch does not allow the workers to be very efficient due to lack of space. The owner is therefore unsure of which layout plan to adopt for the new branch. Thus, intensive research was carried out to explore and understand how the layout strategies adopted by firms, influences the efficiency of workers. Again, this can have a large influence on the perceptions clients create about a brand. A well-designed layout also prevents casualties that may occur in the workplace. Thus, Les Klar adopted a layout plan that encompasses both the office layout and the process-oriented layout for the new branch. An implementation plan in a 3D format was created for the company to enable them to operate the new branch. Part of the solution was however implemented by the company but could not be fully implemented due to unavailability of the remaining equipment. For this solution to work effectively, the company should employ experts to aid with an inventory management system to help them minimize cost and to increase their presence on social media through various forms of advertisements.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Les Klar Couture is a Ghanaian based company that makes unisex clothing for all functions. These functions include weddings, engagements, corporate functions, dinners, and for casual purposes. For well over 15 years, Les Klar has managed to build an efficient and effective brand by utilizing its capabilities and resources to their maximum ability. However, the company faces some difficulty in opening and operating its new branch in Kasoa. This difficulty is associated with the inefficiency of the workers in the current shop at North Industrial Area due to the current layout of their workspace.

The current layout of the workspace does not make enough room for the workers to move around easily, especially during client consultations. The available seating area caters for only two clients at a time. As such, when clients come in to fit and pick their orders, they are made to sit outside if they exceed two (2) during the fitting sessions. Also, excess materials that do not fit in the wardrobe of the shop due to lack of space have occupied parts of the pathway in the shop. This, in turn, prevents the workers from being as efficient as they could have been because they waste time in gaining easy access to the various machines and equipment that facilitate their work. Thus, this project seeks to contribute to the growth and effectiveness of the company by observing and understanding the operations of Les Klar and how their current layout strategy affects it and how it can be improved. A new layout strategy will then be designed for the new shop based on the information gathered from the interviews with the owner, workers,

and clients. The layout strategy will enable the workers in the new shop to be more efficient and deliver on time, once the shop begins to operate.

This chapter, however, discusses and provides insights on the operations of Les Klar Couture, its mission and vision, in addition to an analysis of the fashion industry in Ghana, using Porters 5 forces.

1.2 Company Profile: Les Klar Couture

Les Klar Couture currently operates as a fashion company with its main branch in North Industrial Area and is yet to operate its second branch in Kasoa. Having trained over 150 people in the fashion industry through apprenticeship over the past 15 years, Les Klar currently maintains a small workforce size. As a garment producing company, the dream of Les Klar is to provide people across the world with elegant clothes in a simple but classy style. To achieve this goal, Les Klar focuses on creating specifically ordered dresses for their clients based on their preference, while promoting decency at all cost. Les Klar believes that looking fashionable and classy does not necessarily mean exposing parts of your body. Rather, it entails knowing the various body types and what fits it, to suit every occasion. As such, the clothes made by Les Klar Couture are designed to fit the various body types while ensuring that the company's spectacular designs stand out.

Vision: To make a social impact of promoting decency in the fashion industry in Ghana by producing elegant and classy dresses at affordable prices.

Mission: To empower people to have confidence in themselves concerning their body types, by making them look elegant and classy in our designs, with a touch of decency.

Promise: Les Klar promises to provide its customers quality, affordable and elegant looking dresses to suit every occasion in a very decent but spectacular and fashionable manner.

1.3 Rationale for selecting Les Klar

As the years evolve with changing trends of fashion being rampant, the researcher has realized that most Ghanaians tend to patronize more Ghanaian made clothes than foreign made clothes. This is because some companies in Ghana have established Fridays as an African print day where workers can dress in formal African printed attires to work. As such, the number of African printed fabrics that are available on the market have increased with consumers determining what they want to sew with it.

Les Klar Couture being one of the companies to enable its clients to wear what they want, has its mission being “empowering individuals to have confidence in themselves while looking decent and classy.” The mission of the company, as well as the vision of the company, aims to encourage decent dressing in the younger but growing generation of today. However, to achieve this purpose, the company is unable to work as effectively as it could have due to some reasons such as insufficient working and reception space in the store. Upon working with Les Klar for two years, it was observed that the company could not

house all their clients in their workplace when their orders were ready. Also, the workers have limited walkways since some of the sewing materials have occupied extra floor space. To add up, the current seating arrangement does not allow the owner to undertake peaceful consultations with clients without being interrupted. Although completion of client orders are on a timely basis, these orders can be completed way ahead of time, leaving extra time for the company to take up more orders, only if the arrangement of the shop is suitable to increase efficiency and productivity. However, the company is more concerned with how it can effectively operate its new branch in order not to face the same problem as its old branch currently does. Thus, to ensure that the new branch will be very effective when it opens and begins to operate, there is the need to create space in the store to ensure the comfortability of clients as well as the efficiency of workers, to enable the company to achieve its vision.

1.4 SWOT Analysis Of Les Klar Couture

A SWOT analysis according to Barney (1995), is a simple framework that identifies the importance of internal and external forces to help understand the sources of competitive advantage. It is also a strategic planning tool which analyzes the strengths, weaknesses, threats, and opportunities of a firm and helps it to understand its internal and external environment better. (Mintzberg et al., 1998). A SWOT analysis is therefore essential to help identify the strengths and weaknesses of Les Klar and could form the basis of improvement of weaknesses. Also, the SWOT analysis helps Les Klar to identify the opportunities and threats in the fashion industry and how it could affect its operations as a business. Thus,

to have an in-depth understanding of the operations and sustainability of Les Klar, the need to conduct a SWOT analysis test is essential and helpful. The analysis listed and discussed below informs us on the strengths of the company, their weaknesses and shortcomings, the opportunities they are open to, and the threats they are most likely to face in the fashion industry.

Strengths

Affordable clothing: Les Klar provides its consumers with affordable pricing for its products, thus making it the best option for students, workers, families, brides, children, amongst others to patronize for all occasions. Les Klar typically sells between a 5% - 10% discount as compared to Pamdee fashion which is in Spintex - Ghana. Also, comparing NALLEM, which has several retail fashion shops located in the malls in Ghana, Les Klar sells at a 15% discount. This feature has thus increased the number of clients for Les Klar over the year 2017 by 20%. This is measured by the number of new clients that visit the shop every week in comparison to the original client base of the company.

Great designs and innovation: Seventy-five percent (75%) of customer reviews confirmed an improvement in the innovative designs created by Les Klar over the past three years. About 70% of the total designs made for clients are Les Klar productions while the remaining 30% consists of designs chosen by clients from a wide variety of magazines.

Good customer relationship: To enable their customers to gain a sense of belonging in the company and feel part of the Les Klar family, the staff of Les

Klar have built a strong and direct relationship with the customers. As such, clients are always encouraged by the staff to give feedback on their orders and their level of satisfaction. Also, each worker is assigned to a client and is expected to check up often on the client and to attend to them immediately they arrive at the workplace.

Time consciousness: To satisfy customers completely, Les Klar believes in being timely with orders received. As such, clothes are completed on time for customers to pick up on their due dates. Most designers in the fashion industry in Ghana are not time conscious concerning delivering orders. This makes Les Klar stand out as it delivers on time, contrary to what the other fashion houses or dressmakers do.

Great advertisement strategy: Les Klar adopts the personal selling method as its main form of advertisement strategy. Here, family, friends, and clients introduce their fellow friends, colleagues, and family to the brand, thus accounting for their growing client base. Aside the personal selling, Les Klar also adopts the use of the various social media platforms including Twitter and Instagram to enhance its advertisement and reach. These platforms have several pictures of their designs, modeled by some of their customers, which serves as an attraction and interactive point for viewers and potential customers, especially among the youth. These platforms again serve as a platform where other educated designers can apply to for jobs to join the innovative team at Les Klar Couture.

Weaknesses

Lack of a delivery system: Les Klar currently relies on clients to pick up their orders on the due dates. However, there have been cases where the clients request for their orders to be delivered to them. These deliveries are then made by the worker assigned to the client who makes the delivery using public transport. As such, the company incurs additional operational costs since the worker assigned to the client, will have to put a hold on the orders he or she was working on and attend to it later. This sometimes mounts pressure on the workers and causes the orders of other clients to delay. The company, however, deployed the motorcycle system for a while but stopped after they faced some issues with them. These issues included dishonesty on the part of the motor riders and miscommunication on the part of clients as to their delivery location. As such, the company incurred more cost because the riders would travel extra distances and charge extra prices which the company did not account for when they charged their clients. Thus, there was a halt with the use of motorcycles as a delivery option for Les Klar.

Insufficient spacing capacity to accommodate clients and increase the productivity of workers: The current seating layout of the shop does not allow more than two (2) clients to be comfortably seated in the shop during the consultation. This is because all the industrial sewing machines are also arranged in the workplace, leaving very little space in the workplace to accommodate only two clients at a time. As such, the consultation or waiting period for clients are sometimes interrupted by the movements of the workers. The other clients who

arrive within the period where two (2) clients are already seated inside have no option than to wait outside until their turn. The workers on the other hand, due to the layout of the machines in the shop are unable to increase their productivity to maximum level since they move to and fro the shop to carry out certain activities such as cutting and shaping of garments. As such, they spend a lot of time moving to and fro which could have been used to make another garment.

Lack of a database system for keeping inventory and other records:

Les Klar Couture lacks an inventory management system that will perform the main function of keeping track of stocks and inventory, as well as the cost analysis of the firm. Thus, it is difficult for the firm to account for items that are bought on busy working days and are hence not recorded. This is due to the pressure mounted on the workers to complete specific orders or make alterations on orders, which prevents them from recording it when they arrive from town after making stock purchases for the shop.

Opportunities

Increasing and growing demand for African printed easy wear: The demand for easy and simple African wears have increased with time. As such, most of the youth and some middle-aged workers tend to patronize these easy going but colorful clothes for work, corporate events or for simple occasions. Considering the increasing demand, there is an opportunity for Les Klar Couture to explore the fashion trend of customer demands and see how best it can improvise while producing more clothes that will be readily available for sale. These results can be accompanied by some creative and innovative ideas which

will be made in different sizes to enable the company to sell to a broader client base. Thus, leading to an increase in the revenue earned by the company.

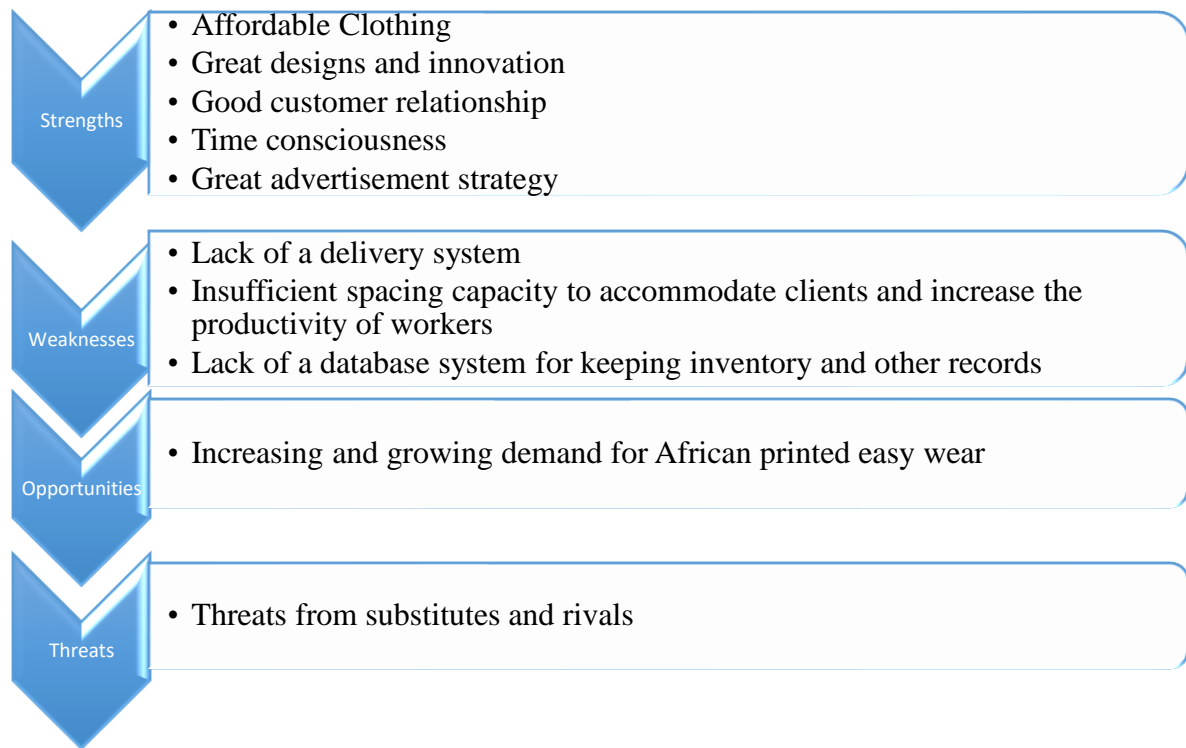
Threats

Threats from substitutes and rivals: There is high competition in the fashion industry since there are a lot of small-scale enterprises and boutiques that equally provide the same function or product at a relatively cheaper cost than Les Klar Couture. Thus, some people may tend to resort to those options if the prices of Les Klar do not favor them. However, only those who are more inclined towards the quality Les Klar provides them with, continue to remain loyal to the brand. As such, Les Klar can lose its clients if their prices rise beyond certain levels.

Below is a figure (Figure 1.1) that shows the summary of the SWOT analysis of Les Klar Couture.

Figure 1.1

SWOT Analysis of Les Klar Couture



1.5 Industry Analysis (Porters Five Forces)

To understand the fashion industry in Ghana better, there is the need to conduct a Porters 5 forces analysis test using information from secondary resources. The fashion industry in Ghana is not clearly defined but encompasses designers, retailers, textile manufacturers, and merchandisers who come together to design, make and sell clothing, accessories, and shoes. The Porters five forces is an approach that is used to determine how competitive a market is and how profitable it can be for a business to thrive in it. The analysis entails information from the five (5) components which include bargaining power of buyers,

bargaining power of sellers, rivalry amongst existing firms, threats of new entrants and threats of substitutes. All these components play a role in the fashion industry, which Les Klar Couture is identified as a player. Below is the analysis of the fashion industry in Ghana using the Porters five forces.

Bargaining Power of Buyers

The fashion industry in Ghana has a high bargaining power of buyers. Buyers have more power in an industry when they can decrease the prices they pay for products. Here, buyers are price sensitive and tend to reduce the amounts they are paying for a product because there are a lot of rivals in the industry offering the same products. As such, if they feel that prices are higher than they expect it to be or plan to spend, they will move to other players in the industry who sell at relatively lower prices. Buyers will then benefit because they can easily switch from one seamstress to another and will incur little to no cost in doing so. This can influence dressmakers to reduce their prices to attract more clients. Thus, the effect of buyers in this industry is high because they have a high impact on the prices the seamstresses in the fashion industry can charge.

Bargaining Power of Suppliers

The bargaining power of suppliers is low in the fashion industry in Ghana because there are a lot of suppliers in the industry. These suppliers differ from each other based on the type of fashion segment they specialize in. Concerning the seamstresses and the tailors in the fashion industry, the textile industry forms part of their leading suppliers. The textile manufacturing sector consists of 67

companies aside the local people who travel to Togo, Benin, and Nigeria to buy fabrics (Awuku, 2018). However, for those who patronize pieces of cloths and use them for their designs, they import their textiles from China or Europe or sometimes patronize the made in Ghana textiles. As such, there is a broad range of options from which the tailors can choose. However, in Ghana, although the African Growth and Opportunity Act (AGOA) expanded its market to access textiles from the USA, not all the garment producing companies in Ghana have access to it. Thus, some suppliers incur higher costs in the production of their goods, hence increasing their prices which in turn leads some of the clients away from them (Quarcoo, 2011). As a result, tailors opt for cheaper means to get access to different pieces of fabrics making the bargaining power of suppliers in the industry low.

Rivalry Among Existing Firms

There is high rivalry amongst existing firms in the fashion industry. This is due to the increasing number of fashion designers, and small-scale dressmakers and tailors in the fashion industry. Due to the low barriers to entry, there are a lot of designers in Ghana ranging from small-scale designers to large-scale designers who make and sell clothes in either large or small quantities. Thus, they compete for the same number of clients in the market using the same fashion trends. Since more clients mean more profit, the various players in the market can influence the prices of the products sold by various fashion organizations. Thus, making the competition in this industry high.

Threats of New Entrants

The threats of new entrants refer to the risks faced by an industry when new entrants try to enter a market (Porter, 2008). In analyzing this threat in the fashion industry, it can be deduced that there are low barriers to entry, as such there is difficulty in preventing more players from entering the industry. This is because there are low capital requirements for a player to join the industry. As such, provided the individual has the necessary machinery, equipment, and skills to operate a fashion shop, he or she can do so easily without any constraints. Also, the absence of restrictive government policy pertaining to fashion in Ghana enables dressmakers and tailors to enter the industry easily. This is because the fashion industry forms part of the informal sector in Ghana and as such have no restrictive rules governing them.

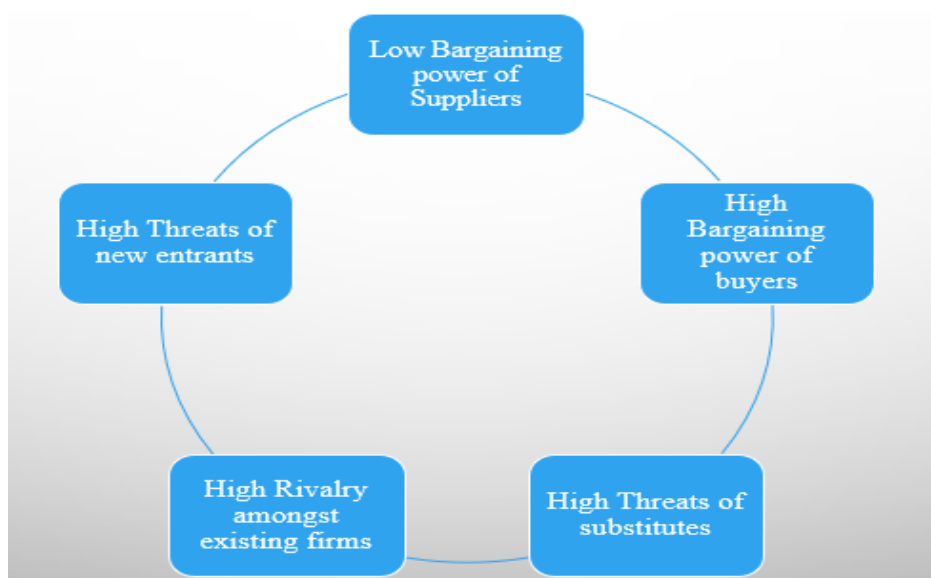
Again, no union governs and regulate all the seamstresses and tailors, and there are no standards that have been set to which these seamstresses and tailors must comply with. Thus, anyone, upon completion of a tertiary institution or a vocational institution, can set up a fashion company provided they have the equipment and space needed to operate. However, if there was a union that governs the fashion industry, it will be difficult for people to enter because they would have to meet the requirements of the fashion industry which may include having a license to operate as the formal sector requires of its participants.

Threats of Substitutes

The threat of substitutes in the fashion industry is high because many retail shops sell already made clothes. These shops are located all over Ghana but have varying prices based on the product and the location of the shop. Also, the existence of “faux” usually pronounced as “fose” which refers to used imported clothing, sells at lower prices in the market as compared to clothes being made by tailors. This is because the developed countries have cheap access to labor and incur a very low cost in the production process (Awuku, 2018). As such, consumers can always switch to a substitute since they provide the same clothing needs of customers. Below is a figure (Figure 1.2) showing a summary of the Porters 5 forces with respect to the fashion industry in Ghana.

Figure 1.2

Summary of the fashion industry in Ghana



1.6 Industry Analysis (An overview of the local context: Ghana)

In Ghana, retailers of clothes, accessories, shoes, bags, manufacturers of African prints, merchandisers, producers of textiles, all come together to form a section of the informal sector of the country. Although it is usually referred to as the fashion industry in Ghana, there is little to no clear distinction of what the industry entails. This is because the industry is not clearly defined and does not have parameters that make it as distinct as other industries. The absence of a union for these workers also enables them to enjoy free tax benefit since they can operate on a low cost and make enough profit over time. The government of Ghana is currently implementing measures to ensure that all workers in the informal sector pay taxes. This is also to ensure that they have a fair idea of the number of people involved in the informal sector (Sarpong et al., 2011).

Although the industry isn't defined, one of the main reasons why the term "fashion industry" has gained popularity in Ghana is due to the few fashion designers that have schooled outside Ghana and have been able to build sustainable brands in the community. Also, the upcoming brands that make celebrities endorse and market their products, increase the fame and brand for fashionable items made in Ghanaian prints. However, there are a lot of players in the fashion industry who try to make a living with the little capital they have. Although the fashion industry is seen to be growing, it has the potential to expand and create more jobs for the unemployed in the country. The government, for instance, can assist the fashion industry in taking loans and encouraging the use of

locally manufactured textiles. Should there be an increase in exports, the country will experience economic growth and a higher standard of living (Awuku, 2018).

The existence of the local seamstresses who in turn form a section of the fashion industry in Ghana are aged between 20-55 years old. The educational level of these individuals ranges from primary six to university, with others having attended vocational training schools. Most of the workers and apprentices belonging to these groups have little to no formal education since they learn how to sew from kiosks through apprenticeship. As such, these group of people tend to set up their workshops based on the knowledge they have and with the little funds they have access to from their families and friends. With this funding, they can secure either the manual hand sewing machine or the electric sewing machine and can choose to work from home or operate in a kiosk (Acquaah-Harrison & Docea, 1997).

CHAPTER 2: PROJECT NEEDS ANALYSIS

Having identified the weaknesses and opportunities of Les Klar, a further understanding of the level of impact and the prioritization of solutions is required to ensure that, the most pressing challenges are dealt with. Project Needs Analysis refers to the steps that are involved in analyzing the problems a company faces in the industry it identifies with. These problems may arise due to varying reasons or situations that the company faces regularly. Thus, a project needs analysis will be conducted at Les Klar Couture to understand better the operations that occur in the company and the challenges they face in the company. This chapter will also outline the various methods used in gathering information from the owner and the workers to determine the needs of the firm.

2.1 Needs Assessment

A needs assessment test is a test that helps to identify the various needs of a firm and which problem needs immediate attention. In conducting a needs assessment, a root cause analysis, a training needs analysis or a gap analysis can be used. A root cause analysis is used to identify the underlying cause of a firm's low performance. The gap analysis is used to determine a performance problem in a firm whereas the training needs analysis helps to discover the training solution needed by a firm to curb their problems (Franklin, 2006). However, for the purposes of this paper, a performance gap analysis will be used to conduct the test. This is because the performance gap analysis determines a performance problem in a company by identifying the difference between expected performance and actual performance (MaCawley, 2009). This test will hence

provide insights on the main issues of Les Klar, with significant emphasis on its internal operations and how the workers go about their respective operations to determine if their activities match up with expected results or not.

2.2 Methodology

The needs assessment test adopted the qualitative method of research to help identify the various and specific needs of Les Klar. This method was chosen because it provides an in-depth understanding of the policies, beliefs and operations of Les Klar which helps to identify the challenges currently faced by the organization. Also, due to the small employee size of the company, this approach was the best way to gather information from the owner and the workers since it was easier to interact with them and gain a better understanding of the firm.

The tools that were used in gathering the information included interviews and observation. The type of interviews used were both the structured and unstructured interview. This was because the structured interviews needed to follow a specific format to help identify the major challenges of the company. The unstructured interview then followed to create room for further probing on answers recorded from the structured interviews. This is because the unstructured interview is more flexible than the structured interview and allows the researcher to identify other actions such as non-verbal actions and gestures thus, providing more insight on the topic discussed (Burcu, 2000).

2.3 Research design and data collection instrument used

In view of the problem stated, both structured and unstructured interviews were conducted with the owner, the workers and about 10% of the client base of the company. This was done at the shop premises during working hours to ensure that enough information was gathered. The clients that were interviewed were chosen based on their arrival at the shop on the day of the interview. They were however taken through an unstructured interview to gather information on the services they experienced and on how they perceived quality. Thus, 6 workers were interviewed with 10 customers as well, who openly gave their feedback. An interview guide was used, and themes were generated out of it as a result. This method was chosen to gain insights and understanding from the information relayed by the owner, the workers, and the clients.

2.4 Sampling method

A simple random sampling method was used to select the 6 workers who were interviewed. This method was used to ensure that the results were not biased but came from all angles of the company. Thus, the owner, in addition to six (6) workers of Les Klar consisting of two (2) individuals from each level (workers, seniors and juniors) were interviewed to provide more information on the general overview of the company including its operations. The seniors and junior are all apprentices but are categorized into seniors and juniors based on their stage of apprenticeship training.

2.5 Observations, Key Findings, and Needs Assessment Results

Observations

A non-participant observation was conducted during a two-week period in May 2018. According to research, this method, when used extensively, aids the researcher to observe the activities undertaken by the workers and to gain an understanding of what the activities entailed. Also, this method ensures that the series of activities carried out in a specific job is easily understandable in its natural context (Liu & Maitlis, 2012; Vanderstoep, & Johnston, 2009). As such, the workers and the owner of the company were observed by the researcher to identify and examine their daily routines and why they engaged in those activities.

The observation period began from 17th May 2018 to 31st May 2018 at the main branch of Les Klar. It was observed that the cutting area was outside the shop and as such required the owner and her workers to move outside whenever they had to cut or shape an outfit that was being made. The ironing board was quite far from the sewing machines and as such required the workers to move to and fro in the shop to iron, spending close to two (2) minutes as travel time on an activity which is deemed as very necessary in the sewing process. However, it was positioned directly opposite the seating area for clients, a view which was not to be consumed by the clients.

A chest of drawers, containing fabrics of clients takes up about one-tenth of the floor space which could have been used for some other work station. As such, the remaining equipment, most notably the sewing machines in the shop, are not separated wide enough to create a flexible pathway for workers to move about

quickly. Again, due to the positions of these machines in the shop, an extension board is used to supply power to the other machines that do not have direct access to wall sockets. Thus, the extension board lies in the path and sometimes causes the workers to stumble upon while they walk to and fro in the shop. Below are figures (2.2 and 2.3) showing the old layout adopted at Les Klar.

Figure 2.2



Source: (Author)

Figure 2.3



Source: (Author)

Key Findings

From the observations and the interviews with the clients, it was noted that the clients did not feel very comfortable when they arrived at the shop. This was because aside undertaking consultation with the owner, the clients could see every activity the workers undertook. This view was however not a pleasant one for them after a long day's work or during a break from work when they want to relax a bit upon their arrival at the shop. As such, they would have preferred to be relaxed in a conducive and serene environment where they were not distracted by the movement and activities of workers but could concentrate on the magazines given to them by the consultant to glance through for ideas before the consultation began.

Again, the entire sewing process is made up of four main work stations. These include; table work (cutting and shaping), sewing, knitting and ironing (pressing). These activities are however intertwined and are carried out simultaneously depending on the style of the attire. Although a garment follows a set process before it switches to what exactly suits it, the work stations are required to be closer to each other to ensure that activities are completed within the shortest possible time. However, this is not the case in the operations of Les Klar. Due to the small size of the shop, the current layout is the best fit for the shop since it houses a chest of drawers that contains over 100 pieces of clothes, in addition to nine (9) sewing machines, an ironing space, and a changing room.

Although this may seem like the current best option for Les Klar, the workers are being inefficient as they spend long periods in total, moving from one workstation to another to undertake an activity. This travel time can, however, be conserved and used on a different attire which will in turn increase the number of orders a worker can complete in a day.

Furthermore, it was identified that the company was not active on the various social media platforms it has signed unto. These platforms include Facebook, Twitter, and Instagram. The reason being that, they lacked a marketing personnel who would have been actively communicating their designs via social media for their prospective clients to have a view of. Thus, the company could not reach as many youth as it would have loved to since they are most often or always on social media platforms on their mobile phones.

Again, because their clientele is made up of about 80% of workers and adults ranging from 30-50 years of age, these group of people preferred to be contacted through phone calls and showed interest in items upon arrival at the shop. As such, whenever pictures of them in their dresses were asked of them, their responses were not encouraging. And for those who willingly forwarded their pictures to the consultant, it was realized that they always had other people in the photos and as such these pictures could not be posted without the consent of the other parties.

Finally, the company has a relatively high cost of inventory due to an ineffective inventory management system. Les Klar adopts the manual calculation

of costs when items are bought both in bulk purchases and in smaller quantities. The reason being that they do not have a smart device where they can store these data, neither do they have a system in place to help them with data storage. Thus, once a worker forgets to put into writing, the various items she purchased from town together with its prices, it poses a problem for the company. This problem arises because the owner bears the entire cost of running the shop and will have to incur the extra cost of repurchasing what the worker forgot to buy or bought differently. Again, during bulk purchases, the owner ends up most often than not, restocking items that are already in stock at the shop, which could have been used to buy other things that were not available.

Needs Assessment Results

After conducting the interviews and undertaking the observations, it was realized that the operations management problem needed more attention than the inventory management problem and the marketing problem. This is because the mission, vision, and promise of Les Klar tie directly into their operations, hence affecting their productivity level.

The performance gap analysis that was conducted indicated that the operations management problem should be tackled primarily before the other problems. This came about as a result of the information gathered from the owner. Every style of dress is different and requires a different amount of time to be completed. As such, there is no set time for a dress to be completed because there are so many factors that influence how and when a dress is made and completed.

It could be from the type of cloth used in sewing the chosen style, it could also be that the material upon sewing, does not match with the machine as such a different alternative has to be used in sewing the attire or it could be that the worker made a mistake and as such has to undo the dress and redo it, amongst many others. As such efficiency can only be measured with the amount of extra time incurred due to the movement of workers from one workstation to the other.

For instance, if it takes about 90 seconds for a worker to move from one machine and back to undertake an activity due to the distance between the work stations, the worker will be more efficient if the stations were closer to each other, and he/she had to spend only 10 seconds moving to and from one workstation to another. Should the worker complete five (5) dresses in a week, the amount of time saved could be used to produce three (3) extra dresses in addition to the ten, making it 12 dresses. These three extra dresses, as small as it may seem to be, will increase productivity from say 30 to 48 dresses per week, if output per worker remains the same.

Moreover, a multi-factor rating matrix was used to measure the various problems that were identified during the needs assessment test. This method was used to rate the various problems in relation to key six (6) key factors that are very important to the business. This includes; the vision, mission, promise, SWOT, industry, and customers since they are key in the running of services. These ratings were however based on how crucial each factor was in relation to the problem with three (3) representing the most crucial, two (2) representing the more crucial and one (1) representing the least crucial. Below is a table showing

the summary of the needs assessment results using the multi-factor ratings (see Table 2.1)

Table 2.1

Findings from Observations and Interviews

Factors	Operation Management	Inventory Management	Marketing
Vision	3	2	1
Mission	3	2	1
Promise	3	2	1
SWOT	3	2	1
Industry	2	1	3
Customer	3	1	2
Total	17	10	9

Key

Most Crucial	3
More Crucial	2
Least Crucial	1

2.6 Problem statement

Although Les Klar has been in existence for quite a long period, it faces a major challenge of operating its new branch. This is due to the uncertainty of which layout strategy the new branch should adopt. This is however attributed to the inefficiency of the workers at the main branch due to the lack of space

available for work to run smoothly and the distance between the various workstations at the old branch.

2.7 Justification for selection of problem

At the old branch, time is wasted by workers as they move from one work station to the other to carry out an activity. On their way to carry out these activities, they are distracted by other items that have taken up excess space as well as customers who are waiting to pick up their clothes. This is because the shop houses clothes which have spent over 10 years in the shop, and as such, have no extra space to keep the current items. The owner, on the other hand, is unable to sell any of these items because there was no policy put in place to ensure that these items could be sold after a period if customers do not come for their items. These items cannot also be moved due to the uncertainty of when their rightful owners will come back for their clothes as for instance; a client came back after 10 years to ask for her clothes which she ordered for, before traveling out of the country.

Although this problem takes a huge amount of space at the old branch, the owner is not willing to risk moving the items to a different location where anything could happen. Thus, customers have very little seating space in the shop and are easily distracted by the movement of the workers in and out of the shop. Hence, there is the need to adopt a new layout strategy that will ensure that workers at the new branch are efficient, by utilizing their work area to suit all their work stations as well as creating a conducive environment for customers, so that they are not distracted by what they see or by the workers moving around.

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

Managing an operation efficiently in a manner that optimizes the inputs of the operation to deliver the desired outputs, involves a number of management decision areas which need to be explored systematically, to ensure the delivery of apt solutions for businesses. The main inputs into business operations are typically categorized into labor, capital, and management. Some of the management practices operations managers use to improve efficiencies include scheduling, maintenance, inventory management, human resources management, design of goods and services but are not limited to layout strategies.

Layout strategies form part of the decisions a firm must undertake in order to gain a competitive advantage. As such, the goal of a layout strategy is to enable firms to develop an efficient and effective layout that will enable the firm meet its competitive requirements (Heizer, Render, & Rajashekhar, 2008). This is however essential because it is one of the key decisions that determine the long-run efficiency of operations in a business. In order to understand the concepts of layout strategies and decisions, this chapter will explore the following research questions to gain insights into the concept of layout strategies and what it entails.

- What are the types of layout strategies?
- Why are layout strategies important?
- How does layout strategies influence the efficiency of work practices?

3.2 Layout Strategy/Decisions

According to Heizer et al., the layout of a firm is an important decision that every business entity must make since it determines the long-run efficiency of operations. He explained further on to say that the main objective of a layout strategy is to ensure that a firm meets its competitive requirements by developing an efficient and effective layout. These strategies consider capacity, processes, customer contact, image, flexibility, costs and quality of work life when designing the layout that will suit a specific job type. Any strategy adopted to suit a specific job type must be able to improve the flow of information, materials, and people in a work area, as well as client interaction and a safer working condition. The strategy must also fully utilize the space, equipment and people in the working area while ensuring that the current layout is flexible enough to make changes when the need arises (Heizer, Render, & Rajashekhar, 2008).

Layout strategies can be grouped into seven (7) types. These include; Office layout, Retail layout, Warehouse layout, Fixed-position layout, Process-oriented layout, Work-cell layout, and Product-oriented layout.

Office layout, according to Becker & Steele (1995), usually used by businesses, permits workers and equipment to be grouped in such a way that allows for safety, while providing comfort and ensuring smooth flow of information in the office space. Here, the importance of the flow of information is what differentiates it from the other layout strategies. In analyzing the layouts for offices, a relationship chart is mostly adopted. This gives a pictorial view of the relationships that exist within the various departments of a company and where

they must be located to ensure effective communication, thereby increasing productivity. Also, most of the offices make use of technology. Thus, the offices must be arranged to ensure that the workers who need quick access to them have them at their disposal. A typical example of this layout is usually found in the banks and investment offices where the various departments are connected while the printers and photocopiers are situated at a central spot in the working space.

The Retail layout is based on the notion that consumers buy more when they are exposed to a lot of products. As such, most retailers ensure that they showcase as many products as they can to their customers to make greater sales which in turn may lead to higher profits. However, the main objective of this layout is to maximize profitability based on the floor space of the shop or retail center. For managers to do so, they must follow five ideas when making a layout decision for a store. For products, these ideas include placing the high draw items around the periphery of the store, the high-impulse and the high-margin items at prominent locations in the shop, while increasing the usage of end-aisle with power items placed on both ends of the aisle, to allow the mission of the store to be conveyed at the forefront of its operations. For services, the ambiance of the shop, coupled with space allocation and functionality, with amazing designs, symbols and artifacts have proved to attract and keep customers in shops for a longer period. Thus, the retail layout ensures that it addresses the flow of information while allocating space and responding to customer behavior (Heizer, Render, & Rajashekhar, 2008).

The Warehousing and Storage layout involves fully utilizing the warehouse volume while lowering material handling costs. The optimum design of a warehouse is determined by the number of products that sit in the warehouse. As such, every warehouse has an estimated number of materials it can hold for a period before goods are restocked. However, it also allows for goods to be arranged in an efficient manner that makes the retrieval of items easy. Managers of warehouses must, therefore, ensure that they lower their costs in finding and moving materials, as well as the deterioration and damage of the materials kept in the warehouses (Cormier & Gunn, 1996). Currently, most modern warehouse layouts use the automated storage and retrieval systems (ASRSs) to efficiently find, place and move items into and from the warehouse. A typical example of a company that uses this layout is the Stop and Shop grocery chain in New England that supplies well over 350 supermarkets with different products. Also, FedEx uses the storage layout and is mainly located near airports to enable them to make quicker deliveries worldwide (Heizer, Render, & Rajashekhar, 2008).

Fixed-position layout: This layout requires fixed projects as the name suggests, where all workers come to work at a specific or stationary area. Sometimes, the equipment used on the job are fixed or are brought in to be used for the job. Examples of these types of projects that use this layout include an operating table in an operating room, houses, highways, amongst others. However, this layout strategy is least adopted since it is not well developed and as such faces three main issues. These issues include limited spacing on site, different material needs at different stages of the project and lastly, the dynamic

volume of materials needed to complete a project. Due to these problems, most companies that adopt this method tend to do a lot of work offsite, and the few left on site, in order to be efficient. The advantages involved in using this layout include; a high variety of tasks assigned to staff, product flexibility and the stability of customers or products, such that they cannot be moved or disturbed during operations (Slack, Chambers, & Johnston, 2007).

Process-Oriented layout: This layout can handle a wide variety of products and services simultaneously. This layout strategy is usually adopted when handling customers with different needs or products with different requirements. For example, two patients in a hospital will be required to go through the same process to a point, although they have different medical needs but will move to a different sector to receive medical advice that is specifically related to their condition. The advantage of adopting this layout method is its flexibility it has when it comes to labor and equipment assignment. The breakdown of one machine does not lead to a halt since work can be shifted from one machine to the other to undertake the same process. There is also relatively easy supervision on plants and equipment. However, its disadvantage is with respect to the general-purpose machines which takes time when switching from one operation to the other. As a result, complex flow machines can be difficult to operate. These machines also require highly skilled personnel to operate them, thus increasing training cost and work-in-process inventories which in the long run increases the capital investments made into the business (Heizer, Render, & Rajashekhar, 2008).

Work-cell layout: This entails the rearrangement of people and machines in various departments to enable them to focus on the production of a single product or a group of related products. This type of layout is usually used in companies that produce large volumes of items which require the specific arrangement of machines and people in a specific environment. The advantages associated with this layout includes; reduced work-in-process inventory, reduced investment in equipment and machinery, increased utilization of machinery and equipment, less floor space, amongst others. The disadvantages with this layout include; high costs incurred in rearranging existing layouts, lower plant utilization output, and the need for more plant and equipment (Slack, Chambers, & Johnston, 2007). This type of layout is most evident and used by most manufacturing companies including breweries.

Product-oriented layout: This layout is also known as the repetitive layout, and it adopts the product layout where similar high-volumes and low-variety products are made. Under this type of layout falls fabrication and assembly lines. The reason being that the process involved in these two types are repetitive as the fabrication line builds components while the assembly line puts the fabricated parts together. As such, the objective of the product-oriented layout is to reduce the imbalances in the fabrication or assembly line. The advantages of using this layout include; low material handling, rapid throughput, easier training and supervision, reduced work-in-process inventories and low variable cost per unit. On the other hand, the disadvantages include; the high volume required to undertake the process, the inexistence of process flexibility due to varying

production rates and products, and the inability of a work stoppage in the production process since it can lead to a tie-up in the entire production process once a machine stops working (Heizer, Render, & Rajashekhar, 2008).

3.3 Importance of Layout Decisions

Layout decisions are essential and crucial in every business. As such, operations managers and heads of companies are required to ensure that, the layout of each department in the company is structured in line with the activities being run to ensure maximum efficiency. Also, these layout decisions are to hedge against hazards that may befall workers on the job. Thus, the importance of making these decisions include the length and clarity of customers, material or information flow, basic safety to staff and customers, staff comfort, and accessibility to staff and customers. Also, the ability to coordinate management decisions, the use of space, and the long-term flexibility which allows organizations to switch layout positions to suit their current operations are also reasons why managers must pay attention to the layout strategies they adopt.

These amongst many others, show the importance of layout decisions for every organization. Thus, every organization is required to choose a layout strategy that would be in the best interest of its workers. However, the effects of an unplanned layout can lead to stressors such as noise, poor ventilation, awkward postures, reduction in workers efficiency, use of long hours for simple tasks, amongst others which may pose as injuries and may distort working procedures in organizations (Slack, Chambers, & Johnston, 2007).

3.4 How Layout of Work Areas Affects the Efficiency of Work Practices

According to Vandyck & Fianu, improper planning of layout for offices and workshops has increased the threats posed by ergonomics on the livelihood and careers of small-scale garment producers popularly known as ‘dressmakers’ or ‘seamstresses’ or sometimes ‘tailors’ in Ghana. The poor ergonomic design of the workshops which includes lighting, ventilation, noise levels, improper seating, and postures led to musculoskeletal diseases and discomfort for workers in the long run. As such, the adoption of ergonomic interventions which included redesigning the layout of offices, the adjustments and the proper use of workstations and their seating gradually reduced the complaints made by the workers thereby increasing their efficiency and productivity (Vandyck & Fianu, 2012).

Dees (1998) stated that the design and compatibility of a unit promote efficiency in the workplace. As such, the floor area, its size, the seating, length of seats, height of the ceiling, positioning of machines, and consumer space must all be factored into the design a workspace. She further on explains that proper planning of the work area causes the workers to be efficient. Thus, the workers are comfortable and productive when they work in environments with better seating arrangements and seats, are less distracted by lighting and wall colors, and their customers are seated in a way that doesn’t prevent their flow of work (Vandyck, 2002).

Canen and Williamson (1998) also highlight the importance of a good facility layout in the workplace. A good facility layout improves the performances

of businesses and help's the company to build a strong competitive advantage over its competitors. Also, there are reductions in unnecessary material handling, inventory costs and operation costs once a work area is organized correctly. For example, if a warehouse is appropriately arranged and adopts a plan that promotes efficiency, it can reduce inventory costs since there will be an indicator of when to order and the goods transported will be delivered to a specific location in the warehouse. Again, operations cost will tend to reduce since the company will not have to bear the extra cost of hiring different laborers to undertake specific jobs required of employees. Thus, to ensure that the flow of products run smoothly in the work area, and the space in the work area is used to its maximum ability, thereby allowing more products to be manufactured, it is essential for a company to have a good layout.

For work to be efficient and effective, the process strategy adopted by Les Klar in its operations must be elaborated upon. A process strategy entails the various approaches taken by organizations when transforming resources into goods and services. Although the objective of this process is to meet customer requirement within cost and other constraints, the long-term effect of this strategy is to ensure efficiency during production. Thus, there are four types of process strategies, one of which every company adopts. These include; process focus, product focus, repetitive focus, and mass customization.

The process focus strategy concentrates mainly on producing low volume but high variety products. These products are usually made in shops where facilities are arranged around the specific processes involved. This method,

however, allows for customization since every product made, varies from each other. As such, because the product moves from one process to the other, and different machines and individuals work on them at separate times, there is high flexibility as the processes can switch depending on the order or the service provided.

The product focus, according to Drira et al. (2007), has its facilities arranged in a successive manner of sequence. Here, the machines are typically arranged in the form of an “assembly line” where the product moves from one line to other till the task is completed. This type of strategy, however, deals with high volume and low-variety products.

The repetitive focus, like the product focus, is a product-oriented production that uses modules due to its less flexibility. Here, the modules used are standardized to enable a long chain of production of the same good across the assembly line. Examples of companies that use this type of strategy include autos, motorcycles, home appliances, amongst others (Heizer, Render, & Rajashekhar, 2008).

The mass customization focus, on the other hand, focuses on the production of large quantity goods and a large variety of products. This variety of products includes custom orders which require many job instructions. Due to the flexibility of the operators, a wide variety of products are made to suit each client’s order precisely and on a financial budget. However, this focus incurs a high cost on its fixed items and a low cost on making a variety of items. Examples

of companies that use this focus include Dell computers, Spotify, Amazon, amongst others (Heizer, Render, & Rajashekhar, 2008).

However, Les Klar uses the product focus which specializes in producing goods that are of low volume but with high variety. At Les Klar Couture, the owner does all the cutting while each worker concentrates on sewing a full attire. As such, for a dress to be made, the fabric moves from the owner to the worker and the worker also undertakes various processes before completing the dress. These processes include pinning, tacking, ironing, sewing, knitting, and overlocking before the dress is completed. A process such as ironing is undertaken several times before the attire is fully ironed when completed. Nevertheless, this current method increases efficiency because each worker does not have to worry about cutting the fabric, but rather concentrate more on completing the dress. As such, once the worker has the attire to be made, he or she goes through the various processes to be able to complete the attire.

Although the process focus is in use by Les Klar at the old shop, the current arrangement does not allow the workers to be fully efficient. As such, there is the need to create a new layout of the work area to encompass both the office space where clients come in for consultation and the working area where the machines and the workers are located.

3.5 Conclusion

Layout strategies can be grouped into seven types namely office layout, warehouse or storage layout, fixed-position layout, retail layout, process-oriented

layout, work-cell layout, and product-oriented layout. These types, however, achieve the same results of ensuring that any activity or job has more than enough space to be undertaken without being interrupted. Also, to ensure that the flow of communication is smooth, there is the need to ensure that the layout of a company is well established. However, for a layout to fit an activity, the type of focus the production is centered on matters most. Thus, the efficiency of workers is influenced by the setting in which they find themselves in. As such, there is the need to ensure that workers at the new shop have the flexibility of moving around easily and working in a space where their processes are linked together and are not too far-fetched.

3.6 Proposed Solution

To ensure that Les Klar Couture becomes very efficient with its operations, a new arrangement of the setting of the new shop will be designed. This design will be done to create enough space, easy accessibility to machines for workers and ensure that customers have a beautiful view of items made by the company. As such, the company would have to adopt the full format of an office layout for the owner, while ensuring that the pathway of the customers is not interrupted by the workers. Also, this office space will ensure that the customers have an appealing view of the company's works as opposed to viewing machines and workers upon entry. In addition to this, the various machines in the shop will be arranged such that there is easy access to all the equipment in the shop to enable the workers to undertake every activity peacefully and soundly.

CHAPTER 4: SOLUTION TOOL AND IMPLEMENTATION PLAN

4.1 Introduction

After identifying the performance gap that exists in the operations of Les Klar, the researcher gained many insights into why the new shop was not operating. This is mainly because the owner is preventing the effect of the layout problem that exists at the old shop from resurfacing in the new shop. As such, the objective is to employ a new layout plan that requires the office space to be set in a serene environment, to enhance efficiency and comfortability of both workers and customers. Although the mission of Les Klar lies in producing classy but affordable and decent looking dresses for its clients, this goal can only be sustained over the years when actions are taken to improve its efficiency, as the company expands.

This chapter, therefore, provides the solution for Les Klar Couture. A well-designed layout plan in a 3D version and pictures of the new layout that has been implemented so far will be attached below and will form the basis of the solution tool. The new layout will enable the workers of Les Klar to work as efficiently as they can and to their maximum ability, in a very flexible environment, and with fewer distractions. Also, clients will be comfortable enough during waiting periods due to the serene environment that will be created at the workplace and will not be distracted by the movement of workers.

4.2 Solution Tool

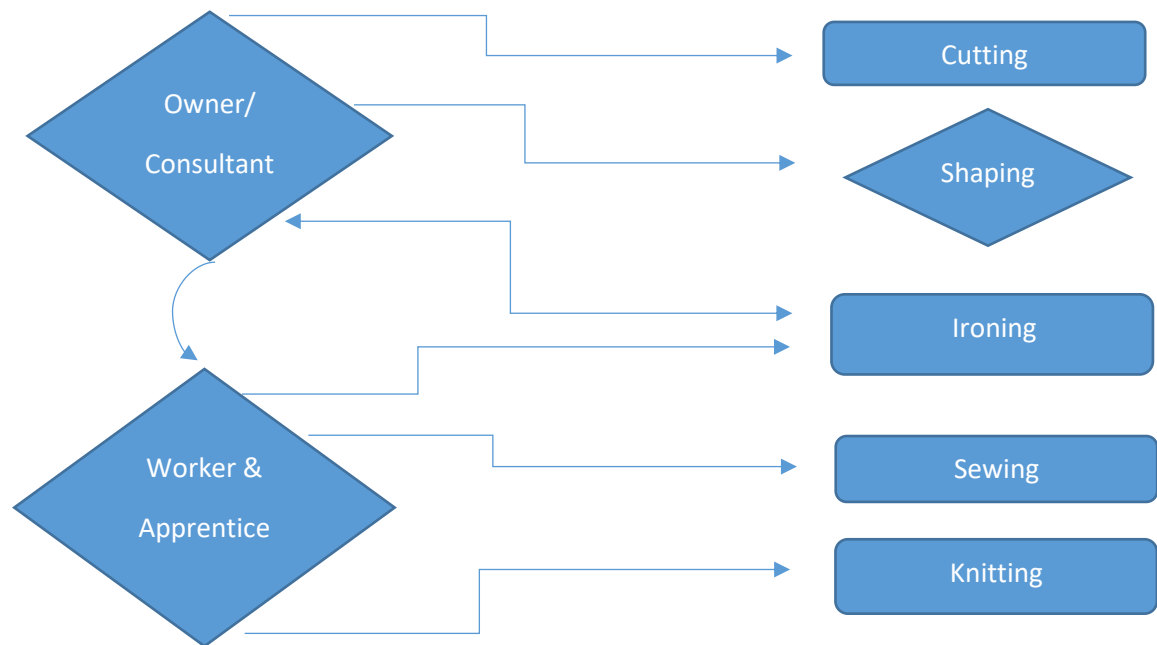
The solution tool designed to ensure that Les Klar Couture can achieve its goal of being efficient and effective in the shortest possible time is a well-

designed layout plan which will be implemented at the new branch. This plan adopts two main types of layout strategies. These include; the process-oriented layout for the working area and an office layout for the reception and consulting area.

The process-oriented layout considers the various stages each garment goes through to become a full outfit. All outfits follow a direct process up to a particular stage of the sewing process and move through different processes based on different customer preferences. Here, the owner of the shop is responsible for cutting all the fabrics into their various parts to make up the full outfit. The cut fabric then moves from the owner to one of the workers or an apprentice depending on what style is being sewn. The worker after ironing and sewing some parts of the fabric together then comes back to the owner for shaping. However, the shaping, on the other hand, can sometimes be undertaken by the worker based on the style of the outfit. After shaping, the worker then continues sewing until the outfit is almost complete and then knits to prevent joined parts from removing. When the outfit is completed, the owner then conducts a final inspection on the outfit made which is then ironed for fitting or bagged for pick up. This entire process makes up the operation of the workers in completing a garment as demonstrated in the figure below (see figure 4.2.1).

Figure 4.2.1

Operations Chart for Workers During Garment Production



With the operation process of the workers explained above, the layout of the shop must be arranged to suit these processes. Inferring from the operations, it is worth noting that cutting, shaping, and ironing are key elements of sewing. As such, the equipment for these activities must be placed at a central point in the workshop to enable easy movement from the machines to the cutting table and the ironing board. Also, the sewing machines which are the core components of the sewing process will be arranged in an order that allows the flow of workers and prevents each worker from bumping into the other. Again, this is to ensure that the machines are widely spaced and have the required ventilation needed to

operate, and at the same time no worker's machine blocks nor prevents the others from working.

Inferring from conversations with the owner, it was realized that there were three industrial machines, an ironing board, an office desk for the owner to receive clients, and a sitting area made up of four seats for customers, to be arranged in the new shop. The shop already has an enclosed space which can be used to satisfy some of its essential needs such as the changing room. However, the goal of this layout is to ensure that every item needed in the shop fits in perfectly and does not prevent any movement either on the part of clients or the workers. Based on the literature review which highlighted the importance of layout and where items should be placed, the layout below stands out as the current perfect and best option for the new shop as shown in the figures below.

Figure 4.2.2 – New layout of the Shop



Source: (Author)

Figure 4.2.3



Source: (Author)

Figure 4.2.4



Source: (Author)

Figure 4.2.5



Source: (Author)

From the pictures above, it can be noted that the sewing machines are placed by the wall facing directly opposite the ironing board and the cutting table. These machines are however spaced out to ensure that the machines are well ventilated to prevent them from heating up and to ensure that, they are well connected to the wall sockets. Also, this is to enable easy movement of basic items from one worker to the other. On the opposite side of the sewing machines are the ironing board and the cutting table. They are placed close to each other to enable workers to undertake both tasks easily with less interruption and to save a huge amount of transportation time. This layout also creates a sizeable walkway that allows the movement of two people at a time.

The wall shelf will hang on top of the cutting table to enable the workers to gain easy access to the fabrics that will be turned in by clients, as well as the completed outfits that will await pick up. Again, because it is attached to the wall, it can hold a relatively large number of items depending on how they are arranged on the shelves. The secondary purpose of the shelves is to serve as a safekeeping spot where workers can keep their belongings (handbags). This is to prevent any item from lying in the walkway that may lead to an accident. However, the curtains placed in between the working area and the reception area serves as a barrier between the workers and the clients. This is to prevent the clients from seeing and interrupting the workers during working hours which is likely to slow them down should they engage in conversations.

On the other hand, the office layout which serves as the other section of the layout of the shop includes two main components. These components are the consultant's/ owner's office and the sitting area for clients. The consultant's office located upon entry into the shop consists of an office table and two office seats for clients. This space is closely linked to the work area to allow the consultant to gain easy access to the working area. Here, the clients are attended to by the owner and sometimes by her personal assistant in cases where she is not available at the branch. Recording client details, taking body measurements, discussing and deciding on the orders based on the client's preference and what perfectly suits them, in addition to inquiries about the pricing system for each order, are the activities undertaken at the consultant's desk. Opposite the owner's desk is the sitting area for clients. Here, clients are offered seats while they wait to engage

with the consultant. Nevertheless, the chairs for the clients are expected to be comfortable enough to allow clients to relax and rest from the previous activities they engaged in before arriving at the shop.

In every fashion shop, be it a retail store or a workshop, it is always best to have a serene environment that will leave lasting impressions in the minds of the consumers. Researchers have found that the physical setting of a place informs and is prone to change the customer's perception of the brand; be it of high or low quality. Physical surroundings according to further research, have been identified to have great influence on the customers ultimate satisfaction and may influence the purpose of the firm in the mind of the customer (Bitner, 1992). This is mostly referred to as a servicescape, and it is known to have a high effect on the perception clients have about a service. It also describes the physical surroundings in relation to interior and exterior design which includes great ambiance such as odors, lightning, wallpapers, wall pictures, artifacts, paintings, as well as tangible items such as business cards, brochures, and magazines (Reimer & Keuhn, 2005). Thus, it is essential for every company to deploy some of these tools to create a unique perception of their brand in the mind of their consumers. When these servicescapes are employed, the perceptions about the quality of services by individuals rise, leading to an increase in the client base and revenue generated from sales.

For Les Klar to live this dream and create an outstanding view and customer experience for its clients, it must employ the use of servicescapes. As such, the shop will be decorated with a unique wallpaper on the walls of the room

coupled with a set of picture frames which will be hanged on the wall behind the owner to enable clients to see the works of the brand. Again, the curtain used for the division of the work area from the reception side must be colorful to complement the wallpapers and the color of the wall. Also, to enhance the designs and comfort of clients, bean bags made with African printed cloth will be placed in between the seats at the waiting area to serve as coffee tables. On these tables, brochures and magazines will be placed on it to serve as an aid for sample ideas on what clients might want before they interact with the consultant. Finally, dummies dressed in the designs of Les Klar will be placed at the forefront of the shop to serve as an advertisement for passersby and clients.

4.3 How Efficiency will be measured with the new layout.

With the adoption of the new layout, the transportation time spent by a worker walking from one side to another to undertake a task will reduce drastically. Per the calculation from the old shop, it was estimated that a worker took between 10 - 15 seconds to walk to the ironing board and between 20-30 seconds to walk to the cutting table. As such, for each round trip, a worker spends approximately 30 seconds and 60 seconds respectively, to walk and carry out these activities due to the location of the equipment in the shop.

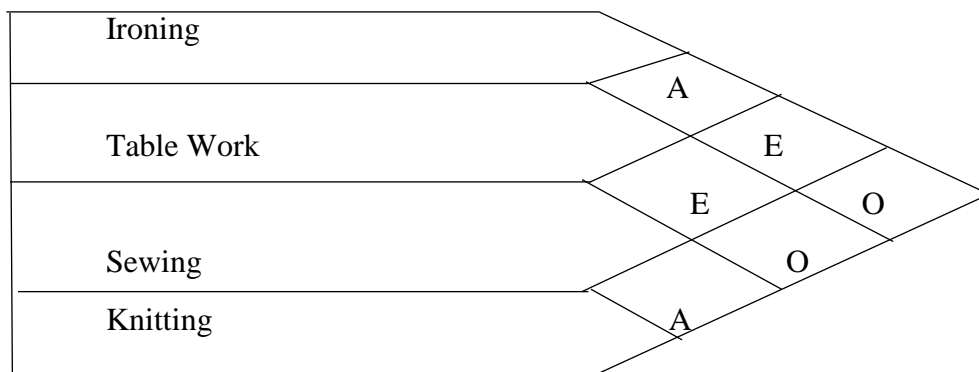
However, with the position of the machines away from the ironing board and the cutting table (table work) in the new layout, the transportation time for both activities to be carried out will reduce from 90 seconds to 10 seconds per each round trip. Thus, for each round trip made by a worker, a total of 80 seconds is saved. The number of times a worker irons is dependent on the style of the

garment being made. As such, if a top, for example, is being made and must be ironed six times, the worker would spend 540 seconds on transportation. This can, however, be reduced to 60 seconds with this new layout, thereby saving 480 seconds of the travel time. This will, in turn, increase the efficiency of workers by a substantial amount as less time will be spent on each garment, leaving more time for new clothes to be made. Thus, the number of clothes completed at the end of the week at the new branch in comparison to that of the old branch can be used to determine the amount by which efficiency will increase by.

Thus, to ensure maximum efficiency, the ironing board must be placed very close to the cutting table, and the sewing machines must also be placed very close to the knitting machine. This is because the various activities are essential in the sewing process as discussed in the earlier paragraphs. Therefore, below is a chart showing the relationship between the sewing stages and their level of required closeness to attain maximum efficiency as adopted from the office layout model (see Figure 4.3.1).

Figure 4.3.1

A relationship chart showing the linkage between the various work stations.



Key

Value	A	E	I	O	U	X
Closeness	Absolutely necessary	Especially important	Important	Ordinary OK	Unimportant	Not desirable

Source: Adapted from Richard Muther, Simplified Systematic Layout Planning, 3rd ed. (Kansas City, Mgt. & Ind'l Research Publications).

4.4 Implementation Plan

The new layout plan will be implemented at the new branch with the machines that are already available. The owner of the shop will be required to follow the same format as shown in the 3D version of the new layout that was designed by the researcher. Also, the owner will take full responsibility and ownership of the tool. This is because the owner is the only one who has the authority to grant permission for changes to be made and implemented.

Considering the solution tool, the wall shelf will require that a measurement of the side of the wall where the shelf will be placed will be taken. Also, laborers will be needed to carry the machines, ironing board, cutting table, dummies and the chairs and tables to their rightful positions. The servicescape solution will also require that a wallpaper with a colorful design which complements the paint of the shop, should be bought and posted on the upper part of the walls. The upper position of the wall is chosen to prevent the wallpaper from coming off early, which will destroy the ambiance created in the shop when

it is fixed on the lower parts of the wall. All items must be put in their right places to ensure that the workers can work as efficiently as they should while allowing clients to relax during their waiting moments.

Below is a summary of the implementation plan with their respective deadlines (See Table 4.4.1).

Table 4.4.1

Implementation Plan

Activities leading to the completion of the solution	Parties responsible for the implementation	Implementation Plan	Timeline
Purchasing of the needed machines and equipment for the work area	Owner of the company	The machines and the required equipment must be bought and transported to the shop.	1 st February 2019 - 1 st March 2019
Arranging the machines in the work area	Owner of the company	Manpower (hired laborers) must be employed to help with the arrangement of the machines in the work area.	16 th March 2019 – 17 th March 2019
Purchasing of the wallpaper, the curtains, the dummies the rack and the wall shelves.	Owner of the company and the employees	The various materials needed for the servicescape must be bought based on the owner's preference to suit the environment, and a carpenter must be employed to design and make the wall shelves.	1 st April 2019 – 26 th April 2019

Fixing of the wallpaper, the curtains, and the dummies	Owner of the company	The wallpapers must be fixed by experts, and the curtains and the dummies must be places appropriately as displayed in the solution.	4 th May 2019 – 5 th May 2019
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However, after several conversations with the owner of Les Klar Couture, the researcher was given the go-ahead to implement the proposed solution with the available resources that the company had. Since the shop is a new branch for the company, the shop was empty upon arrival. The owner, therefore, got a few people to help in the transportation of the equipment to the shop. Below are figures showing the proposed solution that was implemented with the various equipment that was present at the time of the implementation. However, the owner of the shop has given a full affirmation to implement the remaining solution as designed in the shop once they have access to all the equipment needed to suit the shop and the labor to facilitate the implementation activities.

Figure 4.4.2

Implementation of solution tool



Source: (Author)

Figure 4.4.3



Source: (Author)

Figure 4.4.4



Source: (Author)

Figure 4.4.5



Source: (Author)

Figure 4.4.6



Source: (Author)

With the above implementations made, the owner has few items left to implement once she has access to them. These include the wallpaper, the wall shelf, the wall pictures, the bean bags for the coffee tables, and a curtain to divide the working space from the receptionist view.

4.5 Conclusion

The solution tool which is yet to be fully implemented is essential for the growth of Les Klar as it increases its productivity level. This is because for Les Klar to achieve its mission and vision of being one of the leading brands in Africa that seek to promote decency, it must be very efficient in its operations, to be able to meet customer demands as well as proliferate the market with its designs and outfits. However, with this new layout, Les Klar can produce on a large scale and

can decide to venture into retail or e-commerce by making dresses in different sizes to suit customer needs and wants.

4.6 Limitation of the solution

Although this solution provides a simple but easy method of improving efficiency, the solution will work best when the rest of the required equipment is purchased and implemented. This solution is however specific to this company based on the floor space and the size of the shop. Also, the level at which efficiency can increase in the new shop can only be determined when the new layout is fully implemented. Again, the level of efficiency could not be tested since the company is currently recruiting new workers to operate in the new shop.

CHAPTER 5: CONCLUSION AND RECOMMENDATION

5.1 Chapter Overview

This chapter gives a summary of the project and highlights the key findings and insights gathered during the project. The new layout plan that needs to be fully implemented at Les Klar Couture to maximize efficiency as stated in the solution is also highlighted upon. To add up, other problems that arose during the project needs assessment will be highlighted with some suggested possible solutions to help tackle the issue. Finally, the limitations faced during the entire project will also be elaborated on in this chapter.

5.2 Modifications to be made in the operations of Les Klar Couture

Les Klar Couture finds difficulty in setting up its new branch. This is because it does not want to experience the same problem it currently faces at the old branch. Thus, its workers are not as efficient as they should be due to the layout of the shop. As such, a new layout was designed for the new branch to ensure maximum efficiency and client satisfaction and to help the company take on more orders while producing extra clothes for retail purposes.

However, to ensure that the new layout works perfectly when it is fully implemented, Les Klar Couture would have to make some changes to their operations. Most importantly, the owner and her personal assistant must ensure that clients are carefully scheduled to ensure that deliveries are completed way ahead of time. The company can adopt the use of Microsoft Excel to link their client information to their time of order and their pickup times.

Again, the personal assistant must ensure to call all clients upon completion of their orders for pick up. This must be done to prevent keeping client orders past their due dates and to maintain the level of trust between the company and its clients.

Finally, the owner must hedge against making the shop look clumsy or fully packed. As such, the owner must adopt a policy that allows clients to pick up their orders no later than a month after completion. This policy will also allow the owner to sell the order if it spends more than a month in the shop after it has been completed. Thus, this policy will be signed by the client, the owner, and her personal assistant to ensure that once this is signed, there is no alternative to opt out of or breach the agreement. This agreement is very important because it will prevent the shop from looking clumsy and fully packed with the orders that have not been picked up by their respective owners.

5.3 Maintenance of the solution tool

The solution tool must be maintained in the following ways to ensure maximum efficiency. Firstly, the workers and clients must refrain from touching the walls as excessive pressure caused to the wall may cause the wallpapers to tear and wear off. Again, the shop must always be kept in a cool environment. This may require the air-conditioner in the shop to be turned on for a period to create a conducive environment where clients can relax upon arrival.

To prevent excessive dust from entering the workshop since it is closer to the roadside, the door must always be shut, and the curtains must be washed

often. Finally, the magazines left on the table and the coffee tables for the clients must be updated frequently and replaced or mended when they get torn.

5.4 Subsequent problems identified during the needs assessment

From the needs assessment test, it was identified that the company also had a marketing and an inventory management problem. Although Les Klar has about 80% of its client base being elderly and ranging between ages 30 to 50, the remaining 20% make up its youthful client base. This is because the company is still adjusting to the new forms of advertisement in promoting its brand. Thus, to increase the youthful clientele of the brand, the company should actively run a marketing strategy, targeted towards the youth in Ghana and abroad via social media since most of the youth spend their time over there.

Also, with respect to the inventory management problem, the owner of Les Klar Couture must ensure that there is an inventory management system in place to limit the costs of the company. Stocks of materials and items on a regular basis. Therefore, the records of items bought must be documented on a timely basis, to enable the owner to know when to re-stock. The company can, however, do this by adopting the use of Microsoft Excel to help them to track their stocks. The company can, therefore, hire an Excel expert to program the excel sheet to suit their various operations and stock ordering procedure.

5.5 Key insights from the entire project

After undertaking this project, the researcher gained practical and real-world insights as to how each business is spectacular and on how each business

employs different strategies to run its operations. Although work activities run as smoothly as it should, it is very necessary for individuals to understand the various processes undertaken by each business and what it calls for. This knowledge influences the changes that can be made in organizations and hence, influences the choices that are been made by the owners in the long run. As such, the researcher has learned that, although people are resistant to change, change is only possible when the various operations are fully understood, and a right option is selected for the change to be implemented.

Again, during the implementation process, several layout strategies were tested before the final one was adopted. This demonstrated that layout as simple as it may look or seem to be, cannot easily be determined by just the look of an eye. This is because a lot more planning goes into it, to decide which activities are necessary and must be situated close to each other. Thus, understanding the problem is key to the solution of every problem.

5.6 Limitations of this study

The unavailability of the remaining equipment, needed to complement the layout plan which will aid in measuring efficiency, is the major limitation faced in this study. The rest of the equipment needed to be fixed in the shop requires an amount of time to be made and purchased. These include the wall shelves, the main curtain, the wall pictures, the rack for clothes, and the wallpaper. As a result, the implementation of the full solution was delayed because these materials were not available at the time the solution was being implemented. However, the owner implemented the solution with the available items as proof to implement the entire

solution once the items are ready, and to serve as a kick start to run the new branch.

To add up, the unavailability of the owner during working hours and an extremely tight weekend schedule, prolonged the ordering of the rest of the items that were needed to be purchased. Furthermore, this solution is limited to this study due to the structure of the new branch. However, the concept can be adopted for other sewing shops but must be well designed to suit its structure.

Finally, the researcher had some difficulty finding information pertaining to the fashion industry in Ghana. This is because most of the data collected were via secondary research and most workers do not post what exactly goes on in the back-end of their businesses. The foreign companies as well, had little to no evidence of how the back-end of sewing companies looked like. The reason behind this is however that, most of the fashion companies have their sewing workshops either located at a different place or located above their showcase room if it's a story building. This is because the activities undertaken at the back-end are not of interest to clients or customers during the buying process. Thus, they are separated and treated as a different entity on its own according to the company's organizational structure.

BIBLIOGRAPHY

- Awuku, M. D. (2018, October 28). *The President's New Look - Implications on Ghana's Textile Industry*. Retrieved from Government of Ghana: <http://www.ghana.gov.gh/index.php/media-center/features/4036-the-president-s-new-look-implications-on-ghana-s-textile-industry>
- Acquaah-Harrison, P., & Docea, F. (1997). *Apprenticeship System of "Wayside" Seamstresses from Selected Neighborhoods in Accra*. (Master of Philosophy Dissertation). Retrieved from University of Ghana Library (351257)
- Barney, J. (1995). Looking inside for competitive advantage. *The Academy of Management Executive*, 49-61.
- Becker, F. D., & Steele, F. (1995). *The Jossey-Bass management series. Workplace by design: Mapping the high-performance workscape*. San Francisco, CA, US: Jossey-Bass.
- Bitner, M. (1992). Servicescapes: The Impact of Physical Surroundings on Customers and Employees. *Journal of Marketing*, 56(2), 57-71. doi:10.2307/1252042
- Burcu, A. Y. (2000). A comparison of two data collecting methods: Interviews and questionnaires. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 18, 1-10. Retrieved October 1, 2017, from <http://www.efdergi.hacettepe.edu.tr/yonetim/icerik/makaleler/1051-published.pdf>
- Canen, A. G., & Williamson, G. H. (1998). Facility layout overview: towards competitive advantage. *Facilities*, 16(7/8), 198-203.
- Cormier, G., & Gunn, E. (1996). Simple Models and Insights for Warehouse Sizing. *The Journal of the Operational Research Society*, 47(5), 690-696. doi:10.2307/3010019

- Dees, A. (1998). Workspace Resources. Retrieved from www.workspaceresources.com
- Drira, A., Pierreval, H., & Hajri-Gabouj, S. (2007). Facility layout problems: A survey. *Annual Reviews in Control*, 31(2), 255-267. Retrieved from <http://www.sciencedirect.com/science/article/pii/S1367578807000417>
- Franklin, M. (2006). *Performance Gap Analysis: Tips, Tools, and Intelligence for Trainers*. Scottsdale: American Society for Training and Development.
- Heizer, J., Render, B., & Rajashekhar, J. (2008). *Operations Management*. India: Pearson Education, Inc.
- Liu, F., & Maitlis, S. (2012). Encyclopedia of Case Study Research. In *"Nonparticipant Observation"* (pp. 610-611). Thousand Oaks: SAGE Publications, Inc.
- MaCawley, P. (2009). Methods for conducting a needs assessment; Guidelines for cooperative extension system professionals. University of Idaho. Retrieved October 2017, from <https://www.cals.uidaho.edu/edcomm/pdf/BUL/BUL0870.pdf>
- Mintzberg, H., Alstrand, B. & Lampel, J. (1998). *StrategySafari: A Guide through the Wilds of Strategic Management*. Free Press, New York, NY.
- Porter, M. (2008). The five competitive forces that shape strategy. *Harvard Business Review*, 1 - 18.
- Quarcoo, R. (2011). State of Garment Production Under AGOA in the Free zone Areas of Ghana. University of Cape Coast, Ghana
- Reimer, A., & Kuehn, R. (2005). The impact of servicescape on quality perception. *European Journal of Marketing*, 39(7/8), 785-808.

- Sarpong, G. D., Howard, E. K., & Osei-Ntiri, K. (2011). Globalization Of The Fashion Industry And Its Effects On Ghanaian Independent Fashion Designers. *Journal of Science and Technology*, 97-106.
- Slack, N., Chambers, S., & Johnston, R. (2007). *OPERATIONS MANAGEMENT*. Edinburgh: Pearson Education Limited.
- Vanderstoep, S. W., & Johnston, D. D. (2009). *Research Methods for Everyday Life: Blending Qualitative and Quantitative Approaches*. San Francisco: Jossey-Bass.
- Vandyck, E. (2002). *Assessment of Ergonomic Practices in Garment Production Workshops in Madina, Accra and their Impact on Output*. Retrieved from <http://ugspace.ug.edu.gh>
- Vandyck, E., & Fianu, D. A. G. (2012, June 27). The work practices and ergonomic problems experienced by garment workers in Ghana. *International Journal of Consumer Studies*, ISSN 1470-6423, 1-6. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1470-6431.2011.01066.x>

APPENDIX

INTERVIEW QUESTIONS

OWNER OF LES KLAR

1. How long have you been in the fashion industry?
2. What is your clientele base?
3. What are some of the challenges you have been facing since your inception?
4. What are the most recent challenges you have had and how did you go about it?
5. How is a typical day like at Les Klar?
6. Where do you see yourself and your company in the next ten (10) years?
7. How do you plan on building your brand with your current resources?
8. Do you have any plans of expansion and how do you plan on achieving that?
9. What other thing would you prefer your employees to do better at as compared to what they are currently doing?
10. In times where you have emergency cases or have to finish orders on time, how do you go about it?
11. How do you go about your keeping finances, taking into consideration your expenditures and incomes?
12. How long does it take to make and deliver items to your clients?

WORKERS OF LES KLARS

1. How many client orders do you work on a day?
2. How is your typical day like at Les Klar?
3. How long do you take to complete an order?
4. Are there any situations or delays when trying to complete an order?
5. Is the current office layout beneficial to you? If yes/ no, why?
6. Are there any challenges you face in the company?
7. Are there any risks that you are exposed to?
8. Do you believe you are working to your maximum capacity and ability?

CONSENT STATEMENT/NOTICE

I would like to ask your permission to partake in this study. This study involves improving the efficiency of Les Klar Couture through layout optimization. Your participation will be an immense contribution to help us further understand the problem. This research protocol has been reviewed and approved by the Ashesi University Human Subjects Review Committee. If you have any questions about the approval process, please contact Chair, Ashesi University HSCR, irb@ashesi.edu.gh . Also, please contact Clara Boateng on clara.boateng@ashesi.edu.gh or via phone call Or WhatsApp on 0206839595 or Emefa Dako on edako@ashesi.edu.gh for further inquiries.

Please note that any information provided on this subject of study is kept confidential, as such there is no revelation of identity to any other party. All data will be kept strictly confidential. Participation in this study is therefore voluntary, and one is free at any time to discontinue participation and will incur no penalties if one decides to withdraw.

Thank you for your co-operation.

DATE:

VENUE:

REPORT BRIEF FOR CLIENT USE

Les Klar Couture is unable to operate its new shop due to the uncertainty of which layout strategy to adopt to help increase the efficiency of its workers. The solution tool is therefore a layout plan that is set to increase efficiency through the placement of the equipment and at the same time, creates a serene environment for clients with the use of servicescape elements. Below is the solution tool to be implemented at the new shop and its implementation plan.



Implementation Plan

Activities	Parties responsible for the implementation	Implementation Plan	Timeline
Purchasing of the needed machines and equipment for the work area	Owner of the company	The machines and the required equipment must be bought and transported to the shop.	1st February 2019 - 1 st March 2019
Arranging the machines in the work area	Owner of the company	Manpower (hired laborers) must be employed to help with the arrangement of the machines in the work area.	16 th March 2019 – 17 th March 2019
Purchasing of the wallpaper, the curtains, the dummies the rack and the wall shelves.	Owner of the company and the employees	The various materials needed for the servicescape must be bought based on the owner's preference to suit the environment, and a carpenter must be employed to design and make the wall shelves.	1 st April 2019 – 26 th April 2019
Fixing of the wallpaper, the curtains, and the dummies	Owner of the company	The wallpapers must be fixed by experts, and the curtains and the dummies must be placed appropriately as displayed in the solution.	4 th May 2019 – 5 th May 2019